

## POWER SCHOTTKY RECTIFIER

### MAIN PRODUCT CHARACTERISTICS

|             |          |
|-------------|----------|
| $I_{F(AV)}$ | 2 x 10 A |
| $V_{RRM}$   | 60 V     |
| $V_F (max)$ | 0.58 V   |

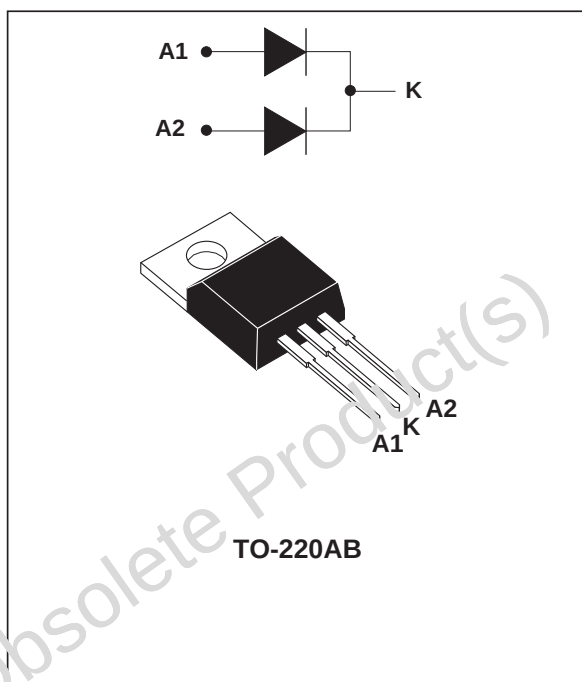
### FEATURES AND BENEFITS

- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD DROP VOLTAGE
- LOW CAPACITANCE
- HIGH REVERSE AVALANCHE SURGE CAPABILITY

### DESCRIPTION

High voltage dual Schottky rectifier suited to Switch Mode Power Supplies and other Power Converters.

Packaged in TO-220AB, this device is intended for use in medium voltage operation, and particularly, in high frequency circuitries where low switching losses are required.



### ABSOLUTE RATINGS (limiting values)

| Symbol       | Parameter                                |                                                            |                         | Value         | Unit        |
|--------------|------------------------------------------|------------------------------------------------------------|-------------------------|---------------|-------------|
| $V_{RRM}$    | Repetitive peak reverse voltage          |                                                            |                         | 60            | V           |
| $I_{F(RMS)}$ | RMS forward current                      |                                                            | Per diode               | 30            | A           |
| $I_{F(AV)}$  | Average forward current                  | $T_{case} = 120^{\circ}C$<br>$V_R = 60V$<br>$\delta = 0.5$ | Per diode<br>Per device | 10<br>20      | A           |
| $I_{FSM}$    | Surge non repetitive forward current     | $t_p = 10\text{ ms}$<br>Sinusoidal                         | Per diode               | 200           | A           |
| $I_{RRM}$    | Repetitive peak reverse current          | $t_p = 2\text{ }\mu s$<br>$F = 1\text{ kHz}$               | Per diode               | 1             | A           |
| $I_{RSM}$    | Non repetitive peak reverse current      | $t_p = 100\text{ }\mu s$                                   | Per diode               | 1             | A           |
| $T_{stg}$    | Storage temperature range                |                                                            |                         | - 65 to + 150 | $^{\circ}C$ |
| $T_j$        | Maximum junction temperature             |                                                            |                         | 150           |             |
| $dV/dt$      | Critical rate of rise of reverse voltage |                                                            |                         | 10000         | V/ $\mu s$  |

## STPS2060CT

### THERMAL RESISTANCES

| Symbol        | Parameter        |           | Value | Unit |
|---------------|------------------|-----------|-------|------|
| $R_{th(j-c)}$ | Junction to case | Per diode | 1.6   | °C/W |
|               |                  | Total     | 0.9   |      |
| $R_{th(c)}$   |                  | Coupling  | 0.15  | °C/W |

When the diodes 1 and 2 are used simultaneously :

$$T_j - T_c(\text{diode 1}) = P(\text{diode 1}) \times R_{th(j-c)}(\text{Per diode}) + P(\text{diode 2}) \times R_{th(c)}$$

### ELECTRICAL STATIC CHARACTERISTICS (per diode)

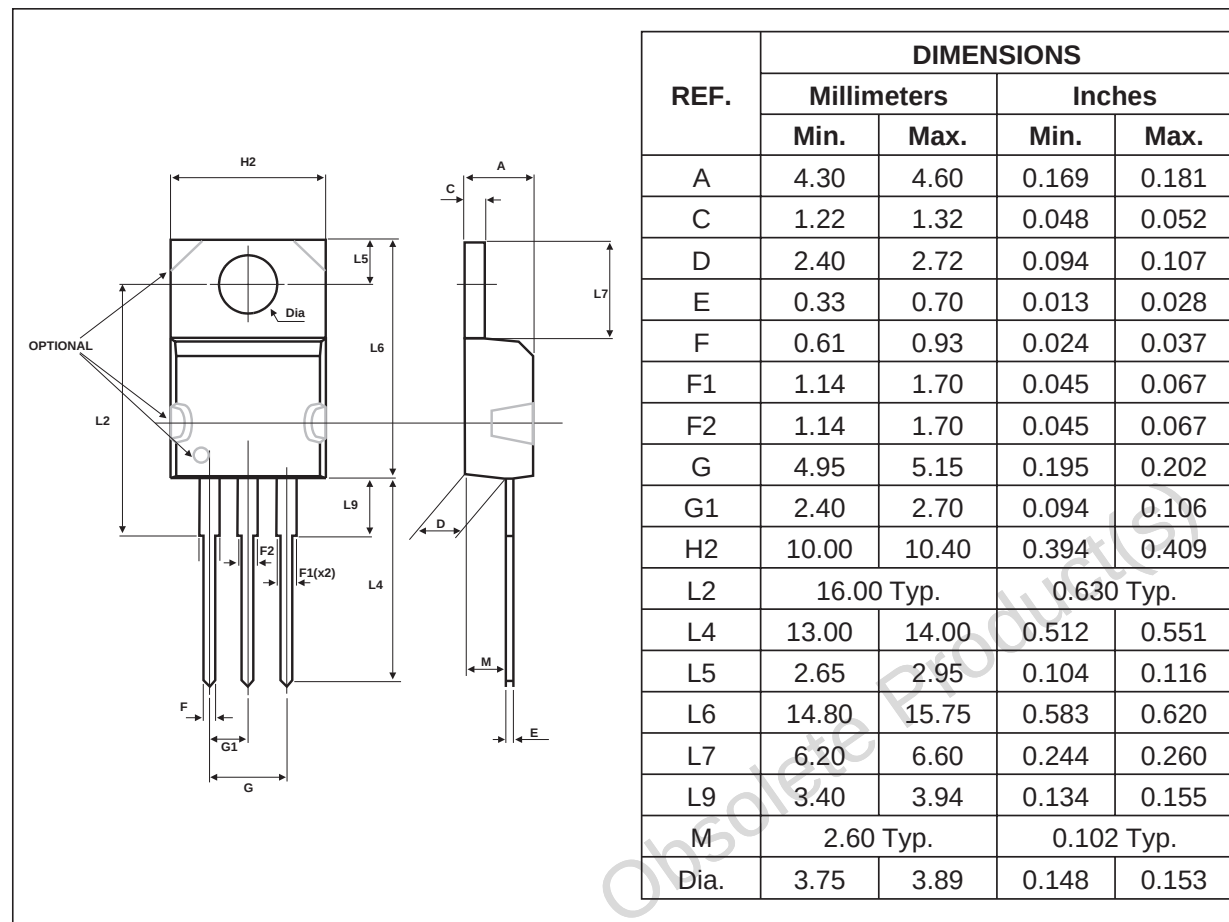
| Symbol     | Parameter               | Test Conditions     |                           | Min. | Typ. | Max. | Unit          |
|------------|-------------------------|---------------------|---------------------------|------|------|------|---------------|
| $I_R^*$    | Reverse leakage current | $V_R = V_{RRM}$     | $T_j = 25^\circ\text{C}$  |      |      | 70   | $\mu\text{A}$ |
|            |                         |                     | $T_j = 125^\circ\text{C}$ |      |      | 33   | mA            |
| $V_F^{**}$ | Forward voltage drop    | $I_F = 20\text{ A}$ | $T_j = 125^\circ\text{C}$ |      |      | 0.8  | V             |
|            |                         | $I_F = 10\text{ A}$ | $T_j = 125^\circ\text{C}$ |      | 0.58 | 0.67 |               |
|            |                         | $I_F = 20\text{ A}$ | $T_j = 25^\circ\text{C}$  |      |      | 0.94 |               |
| C          | Capacitance             | 60 V, 1MHz          | $T_j = 125^\circ\text{C}$ |      | 150  |      | pF            |

Pulse test : \*  $t_p = 5\text{ ms}$ , duty cycle < 2 %

\*\*  $t_p = 380\text{ }\mu\text{s}$ , duty cycle < 2 %

To evaluate the conduction losses use the following equation :

$$P = 0.54 \times I_F(\text{AV}) + 0.013 \times I_F^2(\text{RMS})$$

**PACKAGE MECHANICAL DATA**  
**TO-220AB**


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